

GEOS-Chem default emission configuration					
Version 12.3.0, 01 Apr 2019					
NO					
Anthropogenic	CEDS	Global	1950-2014	monthly	
Anthropogenic	EMEP	Europe	1990-2012	annual	
Anthropogenic	APEI	Canada	1989-2014	annual	
Anthropogenic	NEI2011	USA	2006-2013	monthly	
Anthropogenic	MIX	Asia	2008-2010	monthly	
Anthropogenic	DICE	Africa	2013	annual	
Trash	Wiedinmyer et al.	Global	2008	annual	
Ship^1	CEDS	Global	1950-2014	monthly	
Aircraft	AEIC	Global	2005	monthly	
Biomass burning	GFED4	Global	1997-2013	monthly	
Lightning	Murray et al	Global	online	online	
Soil	Vinken et al	Global	online	online	
^1 via PARANOx					
NO2					
Anthropogenic	NEI2011	USA	2006-2013	monthly	
Anthropogenic	DICE	Africa	2013	annual	
Ship^1	CEDS	Global	1950-2014	monthly	
Ship^1	EMEP	Europe	1990-2012	annual	
^1 via PARANOx					
HNO3 / O3					
Ship^1	CEDS	Global	1950-2014	monthly	
Ship^1	EMEP	Europe	1990-2012	annual	
^1 via PARANOx					
CO					
Anthropogenic	CEDS	Global	1950-2014	monthly	
Anthropogenic	EMEP	Europe	1990-2012	annual	
Anthropogenic	APEI	Canada	1989-2014	annual	
Anthropogenic	NEI2011	USA	2006-2013	monthly	
Anthropogenic	MIX	Asia	2008-2010	monthly	
Anthropogenic	DICE	Africa	2013	annual	
Trash	Wiedinmyer et al.	Global	2008	annual	

Ship	CEDS	Global	1950-2014	monthly	
Ship	EMEP	Europe	1990-2012	annual	
Aircraft	AEIC	Global	2005	monthly	
Biomass burning	GFED4	Global	1997-2013	monthly	
Biogenic	MEGAN	Global	online	online	
SO2					
Anthropogenic	CEDS	Global	1950-2014	monthly	
Anthropogenic	EMEP	Europe	1990-2012	annual	
Anthropogenic	APEI	Canada	1989-2014	annual	
Anthropogenic	NEI2011	USA	2006-2013	monthly	
Anthropogenic	MIX	Asia	2008-2010	monthly	
Anthropogenic	DICE	Africa	2013	annual	
Trash	Wiedinmyer et al.	Global	2008	annual	
Ship	CEDS	Global	1950-2014	monthly	
Ship	EMEP	Europe	1990-2012	annual	
Aircraft	AEIC	Global	2005	monthly	
Biomass burning	GFED4	Global	1997-2013	monthly	
Volcano^1	Aerocom	Global	1979-2009	daily	
^1 Degassing volcano emissions cycle; eruptive emissions are only applied when data is available.					
SO4					
Anthropogenic	CEDS	Global	1950-2014	monthly	
Anthropogenic	EMEP	Europe	1990-2012	annual	
Anthropogenic	APEI	Canada	1989-2014	annual	
Anthropogenic	NEI2011	USA	2006-2013	monthly	
Anthropogenic	MIX	Asia	2008-2010	monthly	
Anthropogenic	DICE	Africa	2013	annual	
Trash	Wiedinmyer et al.	Global	2008	annual	
Aircraft	AEIC	Global	2005	monthly	
Ship	CEDS	Global	1950-2014	monthly	
NH3					
Anthropogenic	CEDS	Global	1950-2014	monthly	
Anthropogenic	EMEP	Europe	1990-2012	annual	
Anthropogenic	APEI	Canada	1989-2014	annual	
Anthropogenic	NEI2011	USA	2006-2013	monthly	

Anthropogenic	MIX	Asia	2008-2010	monthly	
Anthropogenic	DICE	Africa	2013	annual	
Natural	GEIA	Global	1990	monthly	
Trash	Wiedinmyer et al.	Global	2008	annual	
Seabirds	Croft et al	Global	1990	monthly	
Biomass burning	GFED4	Global	1997-2013	monthly	
Ship	CEDS	Global	1950-2014	monthly	
BCPI/OCPI					
Anthropogenic	CEDS	Global	1950-2014	monthly	
Anthropogenic	APEI	Canada	1989-2014	annual	
Anthropogenic	NEI2011	USA	2006-2013	monthly	
Anthropogenic	DICE	Africa	2013	annual	
Trash	Wiedinmyer et al.	Global	2008	annual	
Biomass burning	GFED4	Global	1997-2013	monthly	
Aircraft	AEIC	Global	2005	monthly	
Ship	CEDS	Global	1950-2014	monthly	
BCPO/OCPO					
Anthropogenic	CEDS	Global	1950-2014	monthly	
Anthropogenic	APEI	Canada	1989-2014	annual	
Anthropogenic	NEI2011	USA	2006-2013	monthly	
Anthropogenic	DICE	Africa	2013	annual	
Trash	Wiedinmyer et al.	Global	2008	annual	
Biomass burning	GFED4	Global	1997-2013	monthly	
Ship	CEDS	Global	1950-2014	monthly	
EOH					
Anthropogenic	CEDS	Global	1950-2014	monthly	
Anthropogenic	NEI2011	USA	2006-2013	monthly	
Anthropogenic	MIX	Asia	2008-2010	monthly	
Anthropogenic	DICE	Africa	2013	annual	
Decaying plants	?	Global	climatology	monthly	
Biomass burning	GFED4	Global	1997-2013	monthly	
Biogenic	MEGAN	Global	online	online	
Ship	CEDS	Global	1950-2014	monthly	

C2H6					
Anthropogenic	Tzompa-Sosa et al.	Global	2010	monthly	
Aircraft	AEIC	Global	2005	monthly	
Biomass burning	GFED4	Global	1997-2013	monthly	
Ship	CEDS	Global	1950-2014	monthly	
C3H8					
Anthropogenic	CEDS	Global	1950-2014	monthly	
Anthropogenic	NEI2011	USA	2006-2013	monthly	
Anthropogenic	MIX	Asia	2008-2010	monthly	
Anthropogenic	DICE	Africa	2013	annual	
Aircraft	AEIC	Global	2005	monthly	
Biomass burning	GFED4	Global	1997-2013	monthly	
Ship	CEDS	Global	1950-2014	monthly	
C2H4					
Anthropogenic	CEDS	Global	1950-2014	monthly	
Anthropogenic	NEI2011	USA	2006-2013	monthly	
Anthropogenic	DICE	Africa	2013	annual	
Trash	Wiedinmyer et al.	Global	2008	annual	
Biomass burning	GFED4	Global	1997-2013	monthly	
Biogenic	MEGAN	Global	online	online	
Ship	CEDS	Global	1950-2014	monthly	
C2H2					
Anthropogenic	CEDS	Global	1950-2014	monthly	
Anthropogenic	DICE	Africa	2013	annual	
Trash	Wiedinmyer et al.	Global	2008	annual	
Aircraft	AEIC	Global	2005	monthly	
Ship	CEDS	Global	1950-2014	monthly	
PRPE					
Anthropogenic	CEDS	Global	1950-2014	monthly	
Anthropogenic	EMEP	Europe	1990-2012	annual	
Anthropogenic	NEI2011	USA	2006-2013	monthly	
Anthropogenic	MIX	Asia	2008-2010	monthly	
Anthropogenic	DICE	Africa	2013	annual	

Trash	Wiedinmyer et al.	Global	2008	annual	
Aircraft	AEIC	Global	2005	monthly	
Biomass burning	GFED4	Global	1997-2013	monthly	
Biogenic	MEGAN	Global	online	online	
Ship	CEDS	Global	1950-2014	monthly	
BENZ/TOLU/XYLE					
Anthropogenic	CEDS	Global	1950-2014	monthly	
Anthropogenic	NEI2011	USA	2006-2013	monthly	
Anthropogenic	DICE	Africa	2013	annual	
Trash	Wiedinmyer et al.	Global	2008	annual	
Biomass burning	GFED4	Global	1997-2013	monthly	
CH2O					
Anthropogenic	CEDS	Global	1950-2014	monthly	
Anthropogenic	NEI2011	USA	2006-2013	monthly	
Anthropogenic	MIX	Asia	2008-2010	monthly	
Anthropogenic	DICE	Africa	2013	annual	
Trash	Wiedinmyer et al.	Global	2008	annual	
Aircraft	AEIC	Global	2005	monthly	
Biomass burning	GFED4	Global	1997-2013	monthly	
Ship	CEDS	Global	1950-2014	monthly	note is zero
ALD2					
Anthropogenic	CEDS	Global	1950-2014	monthly	
Anthropogenic	EMEP	Europe	1990-2012	annual	
Anthropogenic	NEI2011	USA	2006-2013	monthly	
Anthropogenic	MIX	Asia	2008-2010	monthly	
Anthropogenic	DICE	Africa	2013	annual	
Trash	Wiedinmyer et al.	Global	2008	annual	
Aircraft	AEIC	Global	2005	monthly	
Decaying plants	?	Global	climatology	monthly	
Biomass burning	GFED4	Global	1997-2013	monthly	
Biogenic	MEGAN	Global	online	online	
Ocean	Johnson et al	Global	online	online	
Ship	CEDS	Global	1950-2014	monthly	

MEK					
Anthropogenic	CEDS	Global	1950-2014	monthly	
Anthropogenic	EMEP	Europe	1990-2012	annual	
Anthropogenic	NEI2011	USA	2006-2013	monthly	
Anthropogenic	MIX	Asia	2008-2010	monthly	
Anthropogenic	DICE	Africa	2013	annual	
Trash	Wiedinmyer et al.	Global	2008	annual	
Aircraft	AEIC	Global	2005	monthly	
Biomass burning	GFED4	Global	1997-2013	monthly	
Ship	CEDS	Global	1950-2014	monthly	
HCOOH					
Anthropogenic	CEDS	Global	1950-2014	monthly	
Anthropogenic	DICE	Africa	2013	annual	
Trash	Wiedinmyer et al.	Global	2008	annual	
Ship	CEDS	Global	1950-2014	monthly	
ALK4					
Anthropogenic	CEDS	Global	1950-2014	monthly	
Anthropogenic	EMEP	Europe	1990-2012	annual	
Anthropogenic	NEI2011	USA	2006-2013	monthly	
Anthropogenic	MIX	Asia	2008-2010	monthly	
Anthropogenic	DICE	Africa	2013	annual	
Aircraft	AEIC	Global	2005	monthly	
Biomass burning	GFED4	Global	1997-2013	monthly	
Ship	CEDS	Global	1950-2014	monthly	
ACET					
Anthropogenic	RETRO	Global	2000	monthly	
Anthropogenic	NEI2011	USA	2006-2013	monthly	
Anthropogenic	MIX	Asia	2008-2010	monthly	
Anthropogenic	DICE	Africa	2013	annual	
Aircraft	AEIC	Global	2005	monthly	
Trash	Wiedinmyer et al.	Global	2008	annual	
Biomass burning	GFED4	Global	1997-2013	monthly	
Biogenic	MEGAN	Global	online	online	
Ocean	Johnson et al	Global	online	online	

SOAP					
Anthropogenic	Yevich and Logan	Global	1985	annual	
Anthropogenic	EMEP	Europe	1990-2012	annual	
Anthropogenic	APEI	Canada	1989-2014	annual	
Anthropogenic	NEI2011	USA	2006-2013	monthly	
Anthropogenic	MIX	Asia	2008-2010	monthly	
Anthropogenic	DICE	Africa	2013	annual	
Ship	CEDS	Global	1950-2014	monthly	
Ship	EMEP	Europe	1990-2012	annual	
Aircraft	AEIC	Global	2005	monthly	
Trash	Wiedinmyer et al.	Global	2008	annual	
Biomass burning	GFED4	Global	1997-2013	monthly	
Biogenic	MEGAN	Global	online	online	
SOAS / MTPO / LIMO / SESQ					
Biogenic	MEGAN	Global	online	online	
MTPA					
Biomass burning	GFED4	Global	1997-2013	monthly	
Biogenic	MEGAN	Global	online	online	
POG1 / POG2					
Anthropogenic	Bond	Global	2000	monthly	
Anthropogenic	APEI	Canada	1989-2014	annual	
Biomass burning	GFED4	Global	1997-2013	monthly	
NAP					
Anthropogenic	Yevich and Logan	Global	1985	annual	
Biomass burning	GFED4	Global	1997-2013	monthly	
HAC / GLYC					
Anthropogenic	Yevich and Logan	Global	1985	annual	
Anthropogenic	DICE	Africa	2013	annual	
Trash	Wiedinmyer et al.	Global	2008	annual	
MGLY / GLYX					
Anthropogenic	Yevich and Logan	Global	1985	annual	

pFe					
Anthropogenic	EMEP	Europe	1990-2012	annual	
Anthropogenic	APEI	Canada	1989-2014	annual	
Anthropogenic	NEI2011	USA	2006-2013	monthly	
Anthropogenic	MIX	Asia	2008-2010	monthly	
Anthropogenic	DICE	Africa	2013	annual	
Trash	Wiedinmyer et al.	Global	2008	annual	
Ship	CEDS	Global	1950-2014	monthly	
MOH					
Anthropogenic	NEI2011	USA	2006-2013	monthly	
Anthropogenic	DICE	Africa	2013	annual	
Trash	Wiedinmyer et al.	Global	2008	annual	
HNO2					
Anthropogenic	NEI2011	USA	2006-2013	monthly	
RCHO / MACR					
Anthropogenic	NEI2011	USA	2006-2013	monthly	
Anthropogenic	DICE	Africa	2013	annual	
Aircraft	AEIC	Global	2005	monthly	
DMS					
Ocean	Johnson et al	Global	online	online	
DST1 / DST2 / DST3 / DST4					
Dust	DEAD	Global	online	online	
Anthro PM2.5^1	AFCID (S. Philip et al)	Global	2015	monthly	
^1 added to DST1 species via the DEAD dust extension					
SALA / SALC / Br2 / BrSALA / BrSALC					
Sea salt	Jaegle et al, Sherwen et	Global	online	online	
HOI / I2					
Oceanic	Carpenter et al	Global	online	online	
CHBr3 / CH2Br2					

Oceanic	Qing Liang	Global	2000	annual	
CH3I / CH2I2 / CH2ICl / CH2IBr					
Oceanic	Carlos Ordonez	Global	2000	monthly	